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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/578,228	05/24/2000	Robert L. Heimann	EL017RH-2	4626
7590	10/18/2004			
Michael K Boyer Orscheln Management Co 2000 US Hwy 63 South Moberly, MO 65270			EXAMINER MULLINS, BURTON S	
			ART UNIT 2834	PAPER NUMBER

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

bf

<b>Office Action Summary</b>	<b>Application No.</b> 09/578,228	<b>Applicant(s)</b> HEIMANN ET AL.	
	<b>Examiner</b> Burton S. Mullins	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-27, 29-33 and 35-40 is/are rejected.
- 7) ☒ Claim(s) 28, 34 and 41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. Claims 20 and 25-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 20, “said at least one treated motor lamination” lacks antecedent basis. In claim 25, “said component motor lamination” lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 20-27, 29, 31-33, 35, 37-38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahy (US 5,488,984) in view of Heimann (US 5,714,093). Fahy generally teaches a method for manufacturing squirrel-cage rotors including treating high-permeability steel core laminations 5 with a solution including sodium nitrite, and injecting molten aluminum therein to produce rotor bars 15 and end rings 17 (c.3, lines 19-25; Figs.1-2). The solution prevents soldering of the aluminum to the steel (abstract). Fahy does not teach a coating “comprising at least one silicate and silica and having a basic pH.”

Heimann teaches a gel coating for inhibiting corrosion of ferrous metals comprising a base made of, among others, silicate esters (c.14, lines 48-49) and further including a thickener such as silica (c.14, line 59), or additives including silica for tailoring thermal resistance (c.15, lines 48-56). Heimann further teaches: “The gel includes buffers in sufficient quantity to

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enable the gel to buffer pH in the range in which the metal to be corrosion-protected is naturally passive to corrosion. For protecting steel, iron or iron alloy, a gel comprising a polyalphaolefin (1-decene) base and about 10% by volume sodium silicate, about 10% by volume potassium silicate and about 10% by volume zinc borate has been found very effective. Such a composition, when applied to the steel, iron or iron alloy surface, provides a pH buffer for the metal in the pH range between 8-13" (c.14, lines 6-15).

It would have been obvious to one of ordinary skill at the time of the invention to modify Fahy and provide a silicate/silica coating with basic pH per Heimann since this would have been desirable to prevent or retard corrosion of the metal laminations.

Regarding claim 21, the aluminum bars 15 and end rings 17 in Fahy partially encapsulate the rotor laminations.

Regarding claims 22-24, as best understood, the coating separates and electrically insulates the laminations from the molded aluminum in Fahy and Heimann.

Regarding claim 26, Heimann teaches polymers (c.14, lines 16-50).

Regarding claim 31, silica additives in Heimann (c.15, line 51) would include silicon carbide and silicon nitride.

Regarding claim 32, note acrylics and urethanes in Heimann (c.15, lines 3-15).

Regarding claim 33, the coatings of both Fahy and Heimann would "interact" with molten aluminum embedding the component.

Regarding claim 35, Fahy's coating is insulative; while not explicitly stating that the coating provides the surface with a resistivity of greater than 1.0 milli-ohm, optimization of ranges for the resistivity would have involved ordinary skill since it has been held that where

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the general conditions of a claim are met, discovering optimum or workable ranges involves routine skill. In re Aller, 105 USPQ 233.

Regarding claim 37, the coating in Fahy is applied to loosely assembled laminations (c.3, lines 38-43).

Regarding claim 38, Fahy notes that sodium borate has been used to form an electrically resistive barrier (c.1, lines 50-55). Heimann teaches borates such as zinc borates (c.11, line 53).

4. Claims 30, 36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahy and Heimann as applied to respective claims 25, 33 and 37 above, further in view of Takimoto et al. (US 5,298,059). Neither Fahy nor Heimann appear to teach ferromagnetic particle additives.

Takimoto teaches a silicate coating composition for rust prevention in steel plates (c.1, lines 20-24; c.5, lines 65-c.6, line 2) including ferromagnetic pigments such as iron oxides (c.4, lines 58-59).

It would have been obvious to one of ordinary skill at the time of the invention to modify Fahy and Heimann and provide ferromagnetic additives per Takimoto since pigments would have been desirable to impart color to the coating.

***Allowable Subject Matter***

5. Claims 28, 34 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Neither Fahy nor Heimann teach or suggest that the silicate comprises sodium silicate, per se.

***Response to Arguments***

6. In response to applicant's argument that there is no suggestion to combine Fahy and Heimann in the rejection of claims 20-27, 29, 31-33, 35, 37-38 and 40 under 35 USC 103(a) since the two are not in the same field of endeavor, it is noted that the "same field of endeavor" test is not the sole test for establishing whether or not the references are non-analogous and have been properly relied upon. In particular, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Fahy is clearly directed to the problem of preventing molten metal alloy such as aluminum from welding to steel rotor laminations and uses a Nitrosol B coating for the laminations, thus satisfying both tests. Heimann is not directed to the particular problem of adhesion/solder between steel and aluminum; however, Heimann is in the same field of endeavor coating steel components for protection against oxidation. One of Heimann's embodiments describes a "...gel include[ing] buffers in sufficient quantity to enable the gel to buffer pH in the range in which the metal to

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be corrosion-protected is naturally passive to corrosion. *For protecting steel, iron or iron alloy*, a gel comprising a polyalphaolefin (1-decene) base and about 10% by volume sodium silicate, about 10% by volume potassium silicate and about 10% by volume zinc borate has been found very effective. Such a composition, when applied to the steel, iron or iron alloy surface, provides a pH buffer for the metal in the pH range between 8-13” (c.14, lines 6-15, emphasis added). Such buffer gel compositions generally fall under the category of “coatings” (c.9, lines 66-c.10, line 11). Therefore, both prior art references are in the field of applicant’s endeavor of steel laminate coatings and thus reliance upon them as a basis for rejection of the claimed invention is proper. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm  
09 October 2004